

REMARKS

With entry of this amendment, claims 1 - 4, 46 - 53 and 57 - 62 are pending. Claims 1, 3, 4 and 49 have been amended; claims 54 - 56 have been canceled; and claims 60 - 62 have been added. Applicants expressly reserve the right to prosecute claims drawn to canceled subject matter in one or more continuation, divisional or continuation-in-part applications. Support for the amended and new claims may be found in the original claims and in the specification at pages 7 and 32 - 34. New matter has not been introduced by the instant amendment.

Amendment of the Specification

Applicants have addressed the informalities pointed out by the Examiner in the Office Action dated December 13, 2002. The title has been amended to "Method of Fermenting Glycerol to 1,3-Propanediol Using a Thermophilic Organism". Additionally, the first sentence of the disclosure now includes the proper claim to priority to parent application serial number 09/405,692, filed September 24, 1999. The parent application has been allowed, and when the patent issues Applicants will further amend the specification to include the U.S. Patent No.

Amendment to the Claims.

Independent claim 1 has been amended to recite that the thermophilic organism is a species of *Caloramator* or a species of *Thermofrachium* wherein the sequence of the 16S rDNA of the thermophilic organism is at least 95% identical to the sequence of the 16S rDNA of the organism deposited as ATCC designation PTA-584. Claims 2 - 4, 46 - 53 and 57 - 59 remain dependent on claim 1. Claim 3 has been amended to recite the step of polymerizing the 1,3-propanediol into a polyester and claim 4 has been amended to conform with claim 3.

New independent claim 60 recites an isolated culture or cells of the organism deposited as ATCC designation PTA-584, and claim 61 recites progeny of the isolated culture.

New claim 62 is an independent claim and recites a method of converting glycerol to 1,3-propanediol in a strain of *Caloramator viterbiensis*, wherein the *C. viterbiensis* has the characteristics of a temperature range for growth at pH 6.0 of 33 to 64°C and ferments glycerol to 1,3-propanediol.

Rejection under 35 U.S.C. §112, 2nd paragraph.

The Examiner has rejected claims 49, 60 and 61 as indefinite. In claim 49, Applicants have replaced the phrase "a mixture of nitrogen and carbon dioxide in a ratio of about 80 to about 20", with the phrase - - a mixture of nitrogen to carbon in a ratio of about 80 to about 20 - - .

Applicants are confused by the rejection of claims 60 and 61. With entry of the preliminary amendment, filed October 18, 2001 original claims 5 - 45 were canceled and new claims 46 - 59 were added. Claims 60 and 61 were not present in the application. Applicants believe the Examiner meant to reject claims 54 and 55, which recite % identity to the genome. These claims have been canceled, without prejudice, from the application.

Rejection under 35 U.S.C. §112, first paragraph

The Examiner has rejected claims 1 - 4 and 46 - 59 under both the written description requirement and the enable requirement of section 112, first paragraph.

The Examiner states,

"The specification teaches only 1 representative species of thermophilic organisms that convert glycerol to 1, 3-propanediol i.e., PTA-584 and only a single species of polymer produced from 1, 3-propanediol, i.e. PPT. Moreover the specification fails to describe any other representative thermophilic organisms with the ability to convert glycerol to 1, 3-propanediol or polymers produced by 1,3-propanediol by any identifying characteristics or properties other than the functionality of being thermophilic organisms with the ability to convert glycerol to 1, 3 propanediol or polymers produced by 1,3-propanediol."

Further the Examiner states while the specification is enabling for a method of converting glycerol to 1, 3-propanediol using PTA-584 and optionally converting the 1,3-propanediol to PPT,

"it does reasonably provide enablement for a method of converting glycerol to 1, 3-propanediol using any thermophilic organism, any thermophilic organism having a genome at least 95% or 99% identical to the genome of PTA-584, or any thermophilic organism having a 16S rRNA sequence at least 95% or 99% identical to the genome of PTA-584 and optionally converting the 1,3-propanediol produced by a thermophilic organism into any polymer."

Claim 1 has been amended to recite that the thermophilic organism is either a species of *Caloramator* or a species of *Thermofrachium*. The specification teaches that phylogenetic analysis showed that the new isolate clustered together within the radiation of the previously described genera *Caloramator* and *Thermofrachium*. Moreover, the strain JW/MS-VS5 (ATCC designation PTA-584) shares 91.7% to 94.1% 16S rRNA gene sequence similarity with species of the previously described genera of *Caloramator* and *Thermofrachium*. Reference is made to pages 32 - 34 of the specification. As taught at page 37 of the specification, the 16S rDNA sequence of strain JW/MS-VS5 was deposited in the Genbank database under accession number AF181848.

Applicants assert the specification teaches how to isolate a thermophilic organism, describes identifying characteristics of the claimed thermophilic organisms, describes how to determine an organisms 16S rDNA, and describes how to determine sequence identity to the 16S rDNA of JW/MS-VS5 by for example by hybridization studies and the BLAST computer program.

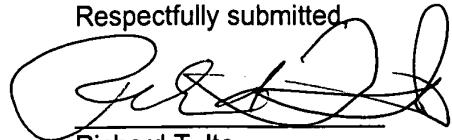
Therefore, Applicants assert the claims are enabled by the specification and meet the written description requirement.

Provisional Double Patenting Rejection

Applicants acknowledge the provisional double patenting rejection under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 6 , and 71 - 79 of co-pending Application No. 09/405,692. Applicants also acknowledge the provisional double patenting rejection under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 6 of co-pending Application No. 09/405,692 in view of Doerr et al., (USP 5,340,909). Applicants respectfully would like to hold the above rejections in abeyance until there is agreed upon patentable subject matter in the present application.

Applicants respectfully submit that all pending claims of the captioned application satisfy all requirements for patentability and are in condition for allowance. Applicants submit that all of the Claims are presently in condition for allowance.

Respectfully submitted,



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